**REMARKS**

Applicant has amended the claims to address the various 35 U.S.C. 112 objections of the Examiner.

New drawings directed to the method claims and product claim15 are enclosed herewith. Descriptive names have been added to Figure 19.

In the following references to paragraphs will refer to paragraph numbers of the Official Action of September 10, 2008.

**Paragraph 4:**

The Examiner asserts that claims 1-8, 10, 12, and 13 are rejected under 35 U.S.C.112 because the specification does not enable for "transmitting the in-band portion of said control information along a physical path for data from one of said first and second layer devices to another of said first and second layer devices transmitting the out-of-band portion of said control information along a physical path different than said physical path for data ....as in claim 1.

Page 6, lines 3-11 provides support to claim 1. The latter states that the in-band portion of the control information is transmitted along the physical path for data between the first and second layer devices while the out-of-band portion is transmitted outside of the data path over the second physical path between the devices. The data shares a physical path with the in-band-control information. A physical path of a signal travelling in a chip is a conductor. A physical path of a signal traveling between devices is a set of conductors. If one examines TDAT in the table on page 14, it carries in-band control words and data from the Link Layer to the PHY device. Similarly RDAT carries in-band

control signals and payload data from the PHY to the Link Layer Device. Fig. 8 shows the schematic representation of these signals. Apart from sharing the same conductor the in-band control words and the data are completely separate. Similarly, out-of-band control words travel along a conductor or a physical path separate from the in-band control and the data. Obviously, any electrical signal on the chip would travel along a physical path. The detail in this passage is sufficient to enable a person skilled in the art to make the invention of claim 1.

The discussion on the first paragraph of page 6 of the original application as the transmission of in-band and out-of-band signals both along the data path and outside the data path would be understood by any person skilled in the art and would be capable of implementation by such a person.

The Examiner states that, in the context of this invention, data and control signals are separated. Therefore, it is argued that a data path is different from a control path. It is further asserted that a physical path can be either a data path or control path. However, every electrical signal path is a physical path because every electrical signal on a chip travels on a conductor. Every electrical signal on or between chips travels along a conductor. A conductor forms a physical path. The data path and the control path can travel along the same physical path. They can be separated by well-known techniques that keep track of where data has been placed relative to other signals. In the present application, data occurs in bursts and control signals are placed between the transfers of data.

**Paragraph 5**

The Examiner says that claims 1-8, 10, 12, 13 do not provide enablement for "wherein said in-band control information controls data bus lanes and not data, wherein said in-band portion is control information as to status and destination address of data being sent and to align parallel data lines etc.

**Paragraph 7**

Claims 1, 3-8,9,10,12, 13, 15 have been rejected under 35 U.S.C. 112 as being Tdevice. The "transmit and receive" direction in claim 1 is between the two layer devices as recited. Transmission can be in either direction as stated on page 6, lines 15-16 the interface operates independently in both transmit and receive directions. (see RDAT and TDAT on pages 15 and 14, respectively).

Referring to claim 4, on page 24 it is stated that a training pattern is sent at least once every preconfigured bounded interval on both the transmit and receive interfaces. It may be used by the receiving end of each interface, etc. In Fig. 20, the receiving end of the Link Layer Device is the Receive Link Layer Device while in the PHY there is a receive interface.

Referring to claim 5, a direction opposite to the data path is opposite the direction from the Transmit Link Layer Device to the PHY if the data path is in this direction and opposite to the latter if the data path is in the reverse direction. (see Fig. 6)

Referring to claim 5, the side of the interface opposite to a transmitting end is the PHY and, for example, if data flows from the Transmit Link Layer Device to the Phy as in Fig. 6 and opposite if it flows in the reverse direction.

Referring to Fig. 20, it is seen that TDCLK is on the Transmit Link Layer Device as is TDAT. I

Referring to claim 6 a transmitting end of the data path is the Transmit portion of the Device doing the transmitting.

Referring again to claim 6, the transmitting end could be either end depending on which device is transmitting.

In claim 6, the data and control signals in line 2 are the same as those in claim 1.

MAX_T is a measure of the number of cycles of the bus after which a training pattern or idle control words have been sent. It is configurable on start-up.

Referring to claim 7, the term "overly long" has been deleted. Overly long transfers can degrade the performance of the code.

In claim 8, reducing the number of bits required in claim 8 refers to the number of bits in the code.

Referring to claim 15 the receiving end of each interface is that end that receives data and in-band control words from the transmitting device.

Referring to claim 15, +/- 1 in line 28 means plus or minus 1. Claim 15 has been amended accordingly.

One bit time is the time required to transmit 1 bit given a particular clock rate.

The receiving end of each interface is simply the receiving end of data and in-band control word transfers.

**Paragraph 8**

The insufficient antecedent problem for the following terms and the steps taken to overcome the problem are as follows;

Claim 1, line 10, "parallel data lines" – Each physical path has a different transit time so that bits arriving on each arrive at slightly different times. Thus, by delaying each signal traveling along a different physical path, one can align the paths or make them parallel so that the bits arrive all at the same time. .

Claim 1, line 12, "said interfacing"

Claim 1, line 14, "each port" – A port is a packet destination. Claim 1 has been amended accordingly.

Claim 3, line 2, "the framing pattern" refers to the structure of the frame used to transmit data and control words. See Fig. 16 for an example.

Claim 6, line 3, the term "the training control pattern" is a pattern of words sent every preconfigured bounded interval on both the transmit and receive interfaces and used to de-skew bit arrival times on the data and control lines.

Claim 7, line 4, the "transfer periods" are the periods over which packets or portions thereof are transferred from the transmitting end to the receiving end.

Claim 7, line 4, "the code" means an error detection code used to detect transmission errors.

Claim 15, line 27, "each interface" means the receiving end of data and in-band control lines that transmit words across an interface.

**Rejection of Claim 1 and 10 under 35 U.S.C.103**

Ayanoglu describes a signaling and control architecture for establishing a wireless connection between mobile users. Thus any controls contemplated by Ayanoglu could not possibly involve the control of a set of physical signals as in the current Application. In column 11, lines 53-57, Ayanoglu defines in-band signaling as using the same VPI and VCi of the assigned connection and using the PT field to distinguish between control and data. In column 12, lines 3-8, Ayanoglu describes an example of out-of-band signaling. The difference lies in the use of VPI and VCI Since VPI and VCI are fields within an ATM cell, both in-band and out-of-band ATM cells traverse the same physical media. On the other hand in the current application, in-band and out-of-band controls travel over separate physical wires.

In 10 (b) it is not understood how the Fig. 7 leads to the conclusion that ATM is a connection orientated protocol. Fig. 7 shows ATM switches and ATM cross-connect elements. ATM switching is shown in greater detail in Figure 4, where it is clear that it is ATM cells that are switched not physical entities.

Referring to 10(c), as stated previously, Ayanoglu uses a field in the ATM cells to distinguish between in-band and out-of-band signaling. Thus, the distinction is logical or at the protocol level. In the present application the distinction between in-band and out—of-band lies in which physical interface the control information uses. The in-band portion uses the same physical interface as the data, the out-of-band uses another completely separate physical interface. No protocol level elements are used or needed to distinguish between in-band and out-of-band. There is no physical separation of ATM cells with different VCI required.

Referring to claim 10, it is alleged that it is obvious from a combination of Ayanoglu and Ofek. Column 22, line 28-29 of Ofek discloses control words as capable of identifying data packet start, end and preemption necessary. The only commonality with the current application is the identification of packet start and end. In the current application, the control words have many more functions. They identify transfer start and end (a data packet can span multiple transfers, (see Fig. 7), provide error detection, measure the skew between the signal traces of the physical interfaces and identify the address of the data packets. The current application does not deal with preemption central to Ofek.

In column 22, line 23 the current application does not deal with links within an interface operating at different speeds. All the links must operate at the same speed. Skew in the context of the current application refers to the links comprising a physical interface having different lengths, eg., one link being 12 inches while another is 18 inches. Data sent on the shorter link will arrive at the destination earlier than that sent on the longer link.

It is believed that all of the points of objection and rejection have been addressed and the Application is now in condition for allowance. Re-consideration of the application herein is respectfully solicited.

Respectfully submitted,
RICHARD CAM et al.

March 10, 2009

by: [signature]
Clifford W. Vermette
Reg. No. 30018
Agent for the Applicant

Vermette & Co.
320-1177 West Hastings St.
Vancouver, B. C.
Canada V6E 2K3
Tel. 604-331 0381